

## CHAPTER 12

### END-STAGE KIDNEY DISEASE AMONG INDIGENOUS PEOPLES OF AUSTRALIA AND NEW ZEALAND

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## INTRODUCTION

Rates of end-stage kidney disease among the Indigenous Peoples of Australia and New Zealand are substantially increased compared with the non-indigenous comparisons.

We have extended the analyses of treated ESKD among indigenous people, and drawn together analyses from elsewhere in the report into a separate chapter.

Figure 12.1

New Patients 1999 - 2008 (% Dialysis Patients on Haemodialysis)						
		Australia		New Zealand		
Mode of Treatment		ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
1999	PD	25	390	48	23	106
	HD	133 (84%)	1169 (76%)	62 (56%)	31 (57%)	95 (47%)
2000	PD	28	399	46	17	78
	HD	122 (81%)	1159 (74%)	82 (64%)	55 (76%)	128 (62%)
2001	PD	32	451	55	15	109
	HD	142 (82%)	1238 (73%)	94 (63%)	53 (78%)	128 (54%)
2002	PD	23	468	51	9	102
	HD	150 (87%)	1186 (72%)	98 (66%)	48 (84%)	141 (58%)
2003	PD	27	467	44	13	96
	HD	146 (84%)	1282 (73%)	102 (70%)	64 (83%)	132 (58%)
2004	PD	27	413	54	12	107
	HD	168 (86%)	1286 (76%)	88 (62%)	53 (82%)	134 (56%)
2005	PD	30	451	40	20	88
	HD	187 (86%)	1544 (77%)	97 (71%)	54 (73%)	148 (63%)
2006	PD	31	552	47	17	96
	HD	189 (86%)	1592 (74%)	121 (72%)	61 (78%)	144 (60%)
2007	PD	55	530	36	13	82
	HD	179 (76%)	1537 (74%)	108 (75%)	63 (83%)	138 (63%)
2008	PD	46	586	34	22	96
	HD	196 (81%)	1548 (73%)	114 (77%)	62 (74%)	140 (59%)

## NEW PATIENTS

Figures 12.1 - 12.7

### Australia

A total of 242 Aboriginal and Torres Strait Islander People commenced dialysis during 2008. This number increased from 234 in 2007.

Although the majority (81%) are treated with haemodialysis, in 2008 the number of people commencing PD was less than in 2007.

### New Zealand

The overall number of Maori and Pacific People commencing dialysis has been stable since 2001, with a decline from 2006 continuing for Maoris but rising for Pacific People in 2008.

A greater percentage of Maori commenced haemodialysis as initial treatment in 2008 than ever before, with an associated decline in use of PD.

Figure 12.2

Percentage of New Patients - Australia Commencing on Haemodialysis

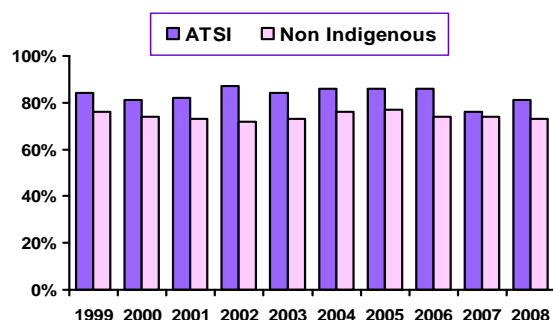
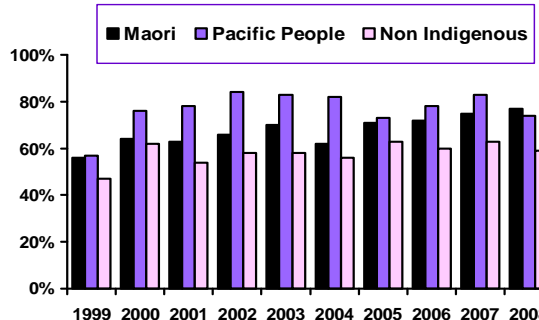


Figure 12.3

Percentage of New Patients - New Zealand Commencing on Haemodialysis



## INCIDENCE RATE

Overall, the incidence rate of indigenous people is considerably greater than that for non-indigenous people. Direct comparisons are confounded by the different age distributions - the indigenous population is considerably younger than the non-indigenous population. The relative difference differs with age and also with gender - this is illustrated in Figure 12.5.

Figure 12.4

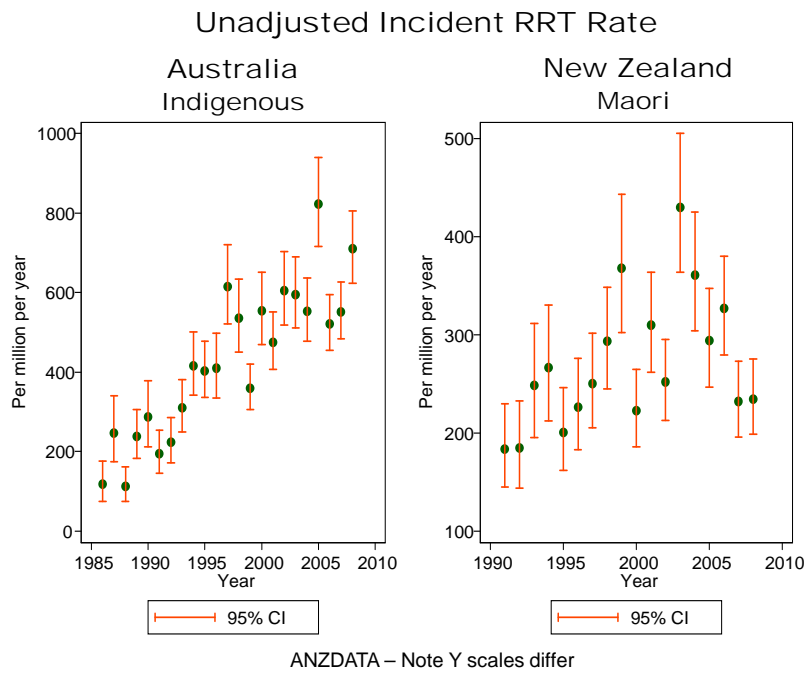
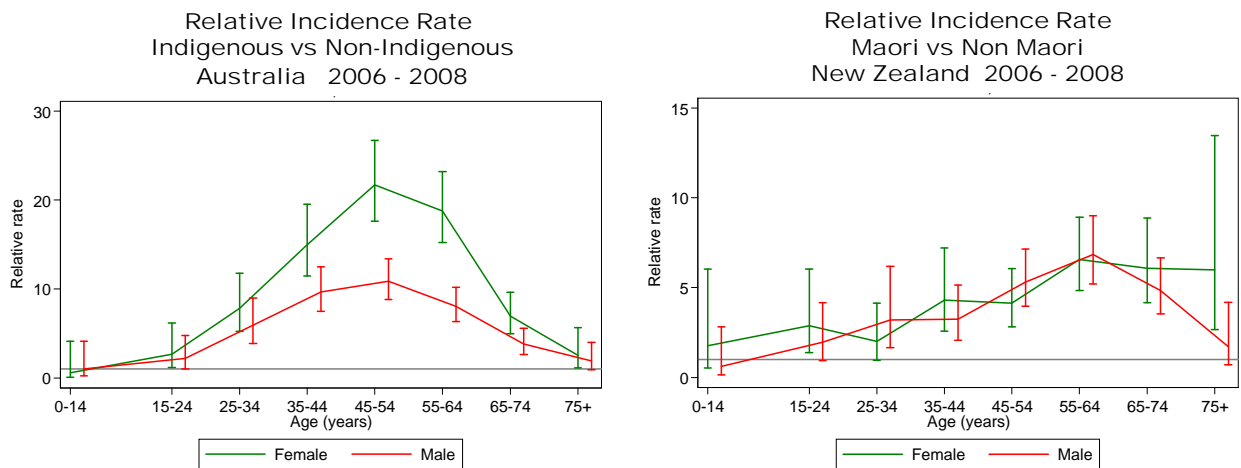


Figure 12.5



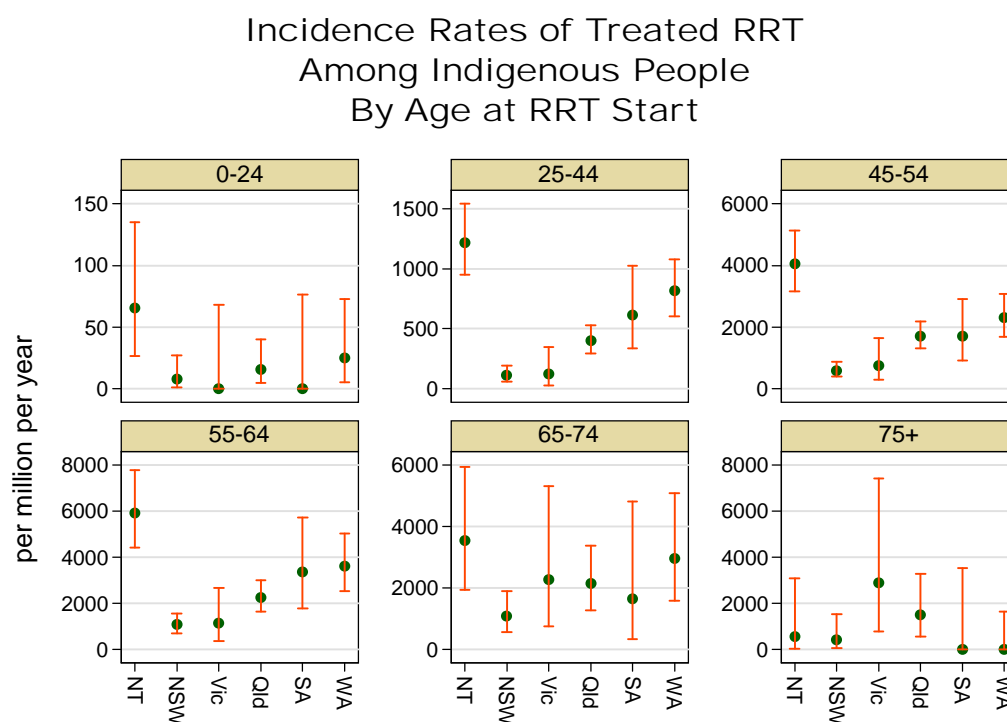


## INCIDENCE RATE

There is also considerable variation between States in the RRT incident rates. The incidence rates for Aboriginal and Torres Strait Islanders for each State can be seen in Figure 12.6.

While rates for the very young (<15 years) and older (>65 years) groups are similar in each State, the rates for people 25-65 years of age show a clear trend of progressively higher rates from NSW/Victoria to Queensland then South Australia, Western Australia and the Northern Territory. Data is presented for the period to 2006; this is the most recent year for which detailed Aboriginal/TSI population estimates are available.

Figure 12.6



ANZDATA and ABS data, 2004-6

Age specific trends for both Australia and New Zealand  
 Indigenous groups are shown in Figures 12.7 and 12.8.

Figure 12.7

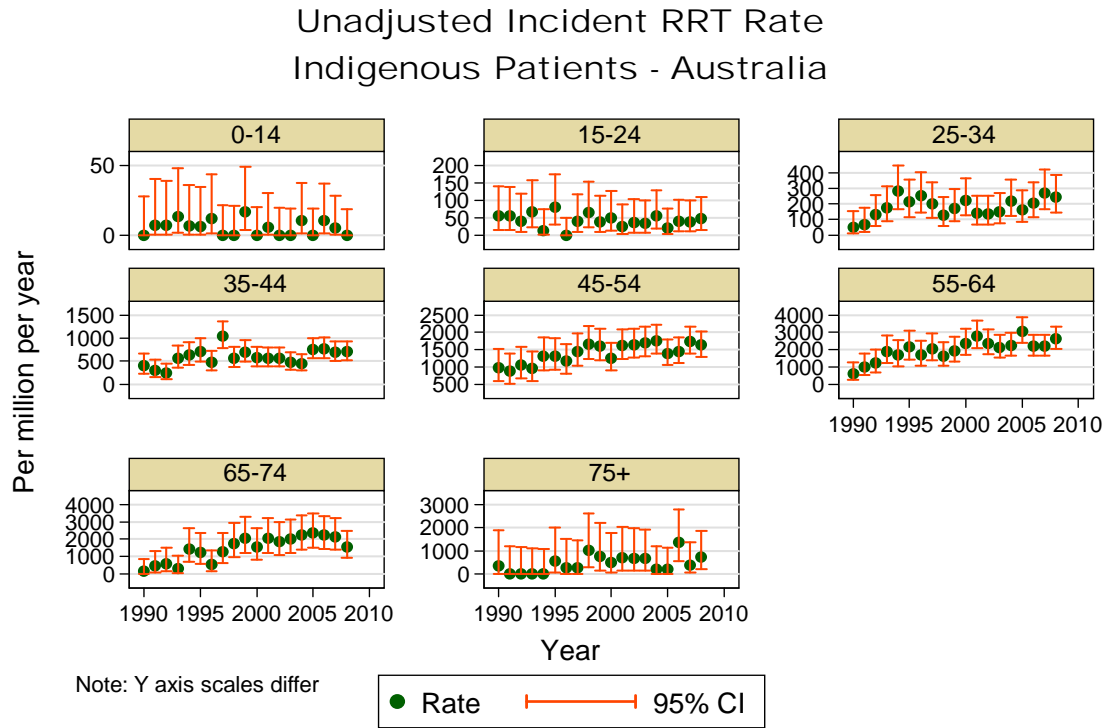
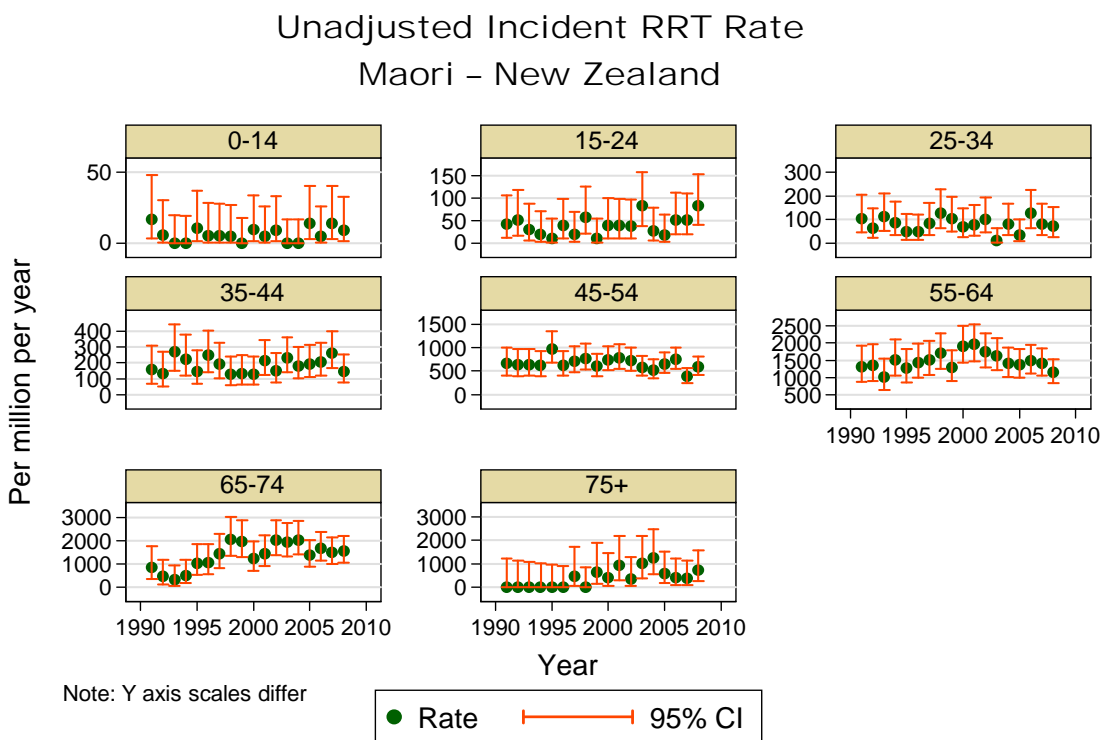


Figure 12.8





## NEW TRANSPLANTS

### Australia

Thirty one transplant operations were performed in Aboriginal and Torres Strait Islander recipients in 2008, of which seven (23%) were from living donors (Figure 12.9).

### New Zealand

The number of Maori transplanted during 2008 has increased from 2007 with 58% from living donors.

Pacific People had six deceased donor and four (40%) living donor transplants in 2008.

Figure 12.9

		New Transplants 1999 - 2008 (% Transplants with Living Donor)				
		Australia		New Zealand		
Donor Source		ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
1999	DD	20	266	12	5	53
	LD	3 (13%)	166 (38%)	5 (29%)	3 (38%)	34 (39%)
2000	DD	15	335	11	3	61
	LD	3 (17%)	178 (35%)	2 (15%)	1 (25%)	28 (31%)
2001	DD	18	310	10	5	52
	LD	3 (14%)	210 (40%)	5 (33%)	1 (17%)	37 (42%)
2002	DD	17	357	10	13	46
	LD	0 (0%)	230 (39%)	3 (23%)	2 (13%)	43 (48%)
2003	DD	10	315	8	11	48
	LD	3 (23%)	215 (41%)	8 (50%)	3 (21%)	33 (41%)
2004	DD	22	384	7	8	42
	LD	4 (15%)	240 (38%)	5 (42%)	4 (33%)	39 (48%)
2005	DD	19	358	3	2	42
	LD	3 (14%)	243 (40%)	0 (0%)	2 (50%)	44 (51%)
2006	DD	24	344	6	4	31
	LD	3 (11%)	270 (44%)	4 (40%)	3 (43%)	42 (57%)
2007	DD	14	330	8	2	55
	LD	4 (22%)	267 (45%)	9 (53%)	4 (67%)	45 (45%)
2008	DD	24	425	5	6	42
	LD	7 (23%)	347 (44%)	7 (58%)	4 (40%)	58 (58%)

## PREVALENCE

Figure 12.10

		Prevalent Patients 2004 - 2008 (% Haemodialysis Patients on Home HD)				
		Australia		New Zealand		
Mode of Treatment		ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
2004	PD	130	1664	240	98	407
	HD	708 (5%)	5505 (14%)	360 (26%)	232 (8%)	442 (34%)
	Func TX*	124	6180	113	69	1019
2005	PD	145	1715	236	91	392
	HD	780 (5%)	5997 (13%)	403 (26%)	260 (10%)	496 (33%)
	Func TX*	133	6424	107	70	1043
2006	PD	148	1902	247	88	432
	HD	840 (6%)	6369 (13%)	435 (25%)	282 (14%)	512 (34%)
	Func TX*	147	6724	106	75	1048
2007	PD	155	1976	231	89	425
	HD	931 (6%)	6639 (14%)	456 (24%)	319 (12%)	548 (33%)
	Func TX*	147	6973	108	77	1086
2008	PD	162	2043	221	108	433
	HD	985 (6%)	6872 (13%)	462 (23%)	322 (13%)	553 (32%)
	Func TX*	159	7382	112	83	1131

\* By Resident Country at 31st December

Figure 12.10

### Australia

The number of prevalent Aboriginal and Torres Strait Islander People with treated end-stage kidney disease increased by 6% from 2007.

The percentage of ATSI on home haemodialysis was unchanged over the five year period to 2008.

The percentage of ATSI treated with peritoneal dialysis increased 5% from 2007.

### New Zealand

The number of prevalent Maori with treated end-stage kidney disease remained the same, whilst Pacific People increased by 6% in 2008.

A lower percentage of Maori (23%) are now treated with home haemodialysis than in previous years, whilst in Pacific People, this percentage (13%) has increased since 2004.

The use of peritoneal dialysis in the Maori population decreased by 4% and in Pacific Islanders it increased by 21% in 2008.

PREVALENCE AND INCIDENCE BY STATE (Figures 12.11 - 12.16)

**State Incidence**

The Northern Territory has the highest national incidence among indigenous people of treated end-stage kidney disease in Australia at 1192 pmp, the next highest in Western Australia (774 pmp). Detailed data are given in Figure 12.22.

**Dialysis by Resident State**

Treatment patterns for Aboriginal and Torres Strait Islander People vary by State. The highest rates are in the States with highest incidence rates.

**Transplant by Resident State**

Rates of prevalent transplants vary substantially between States with highest rates in South Australia.

These rates are per population, not per dialysis patient, and they reflect both background rates of kidney disease and transplant rates.

Figure 12.11

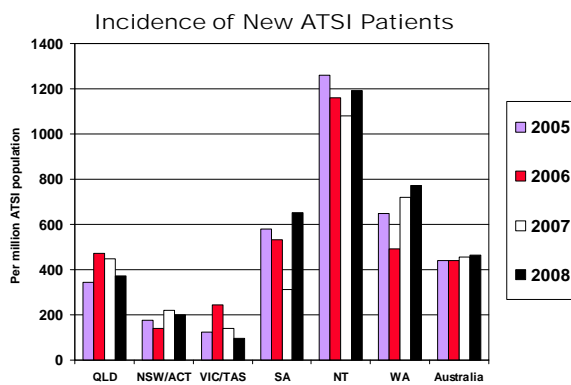


Figure 12.12

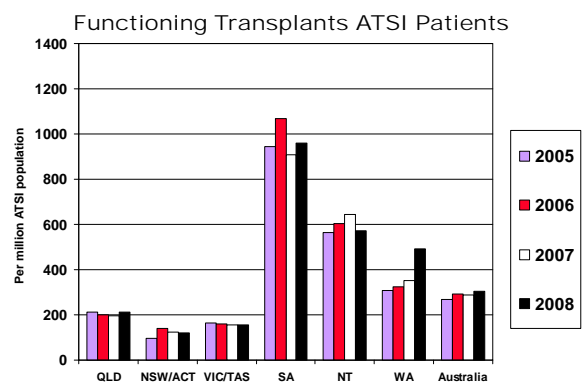


Figure 12.13

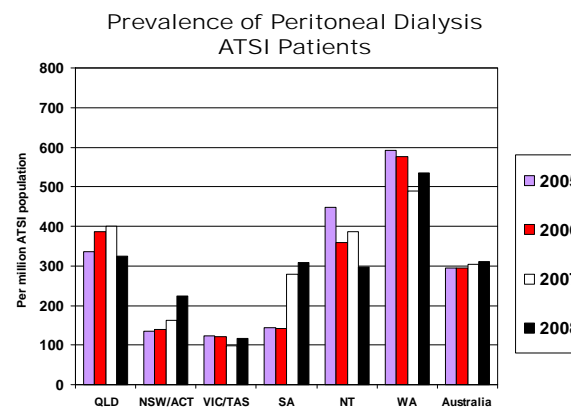


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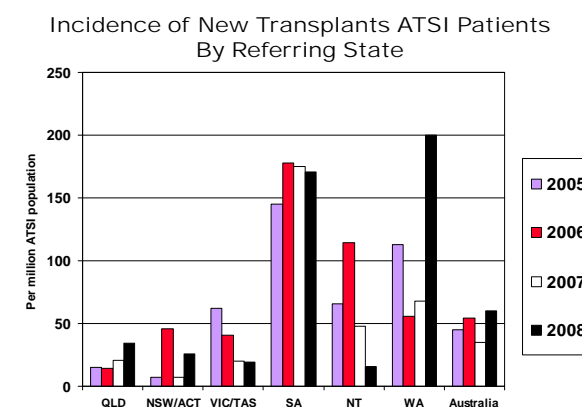


Figure 12.15

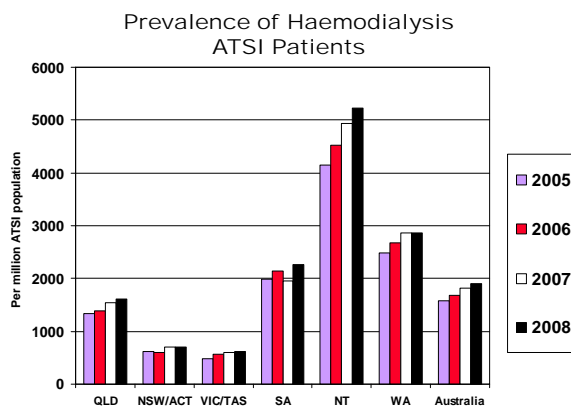
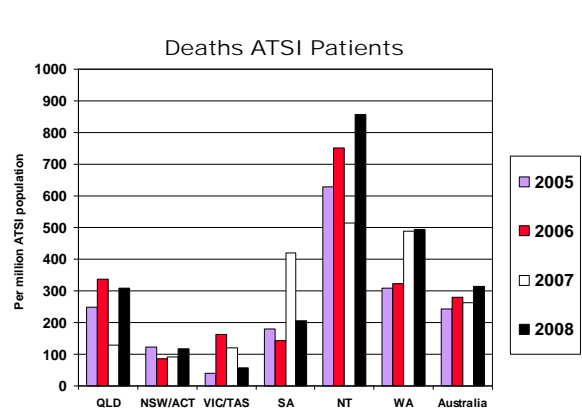


Figure 12.16





## PREVALENCE AND INCIDENCE OF MAORI AND PACIFIC PEOPLE IN NEW ZEALAND (Figures 12.17 - 12.22)

Figure 12.17

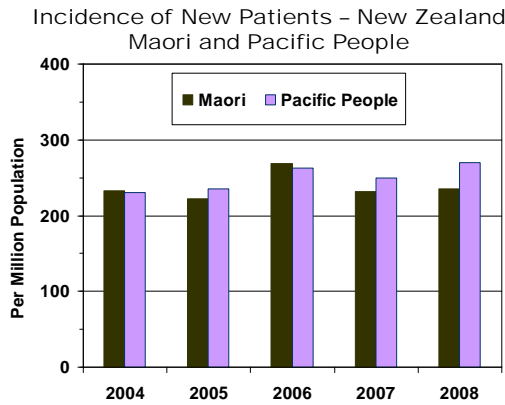


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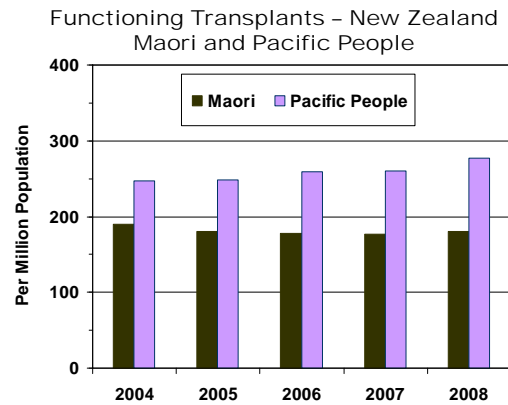


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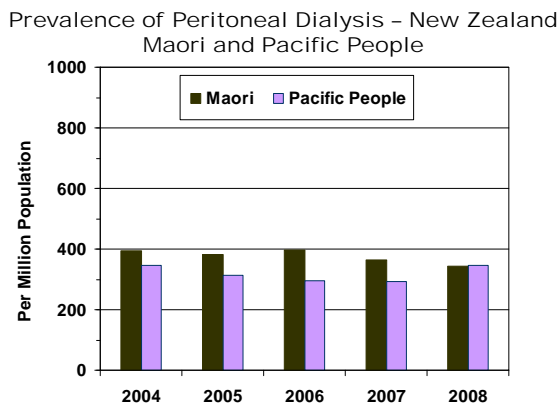


Figure 12.20

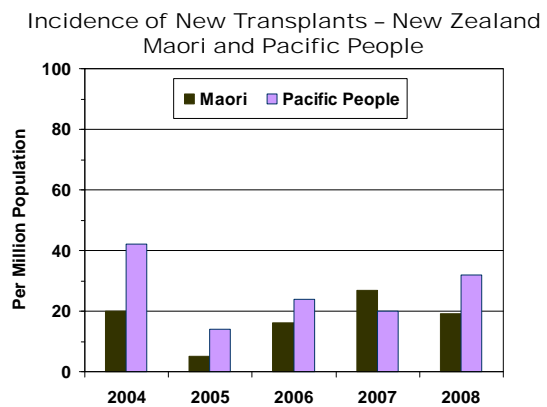


Figure 12.21

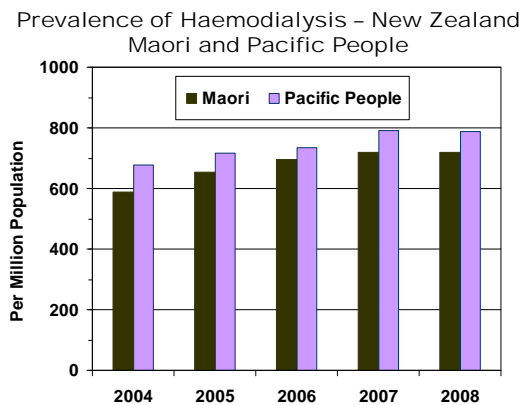
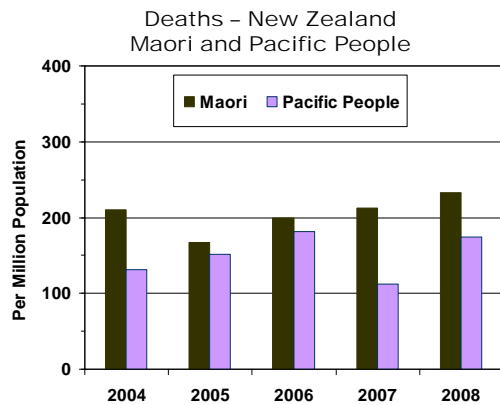


Figure 12.22





## PREVALENCE AND INCIDENCE BY STATE

Figure 12.23

Prevalence and Incidence - Aboriginal And Torres Strait Islanders  
2004 - 2008 by Resident State  
(Number per million ATSI population in each State)

	QLD	NSW/ACT	Vic/Tas	SA	NT	WA	Australia
<b>2004</b> New Patients	47 (351)	13 (89)	9 (188)	10 (370)	72 (1210)	44 (632)	<b>195 (403)</b>
Prevalent PD	40 (298)	19 (130)	4 (84)	2 (74)	23 (387)	42 (603)	<b>130 (269)</b>
Prevalent HD	177 (1321)	84 (576)	24 (502)	49 (1811)	215 (3613)	158 (2268)	<b>708 (1463)</b>
Functioning Transplants	28 (209)	15 (103)	5 (105)	25 (924)	33 (555)	18 (258)	<b>124 (256)</b>
Transplant Ops *	5 (37)	2 (14)	1 (21)	7 (259)	9 (151)	2 (29)	<b>26 (54)</b>
Deaths	40 (298)	15 (103)	1 (21)	10 (370)	34 (571)	21 (301)	<b>121 (250)</b>
<b>2005</b> New Patients	47 (344)	26 (176)	6 (123)	16 (580)	76 (1259)	46 (648)	<b>217 (440)</b>
Prevalent PD	46 (336)	20 (135)	6 (123)	4 (145)	27 (447)	42 (592)	<b>145 (294)</b>
Prevalent HD	183 (1338)	92 (621)	23 (473)	55 (1994)	250 (4141)	176 (2480)	<b>780 (1583)</b>
Functioning Transplants	29 (212)	14 (95)	8 (164)	26 (943)	34 (563)	22 (310)	<b>133 (270)</b>
Transplant Ops *	2 (15)	1 (7)	3 (62)	4 (145)	4 (66)	8 (113)	<b>22 (45)</b>
Deaths	34 (249)	18 (122)	2 (41)	5 (181)	38 (629)	22 (310)	<b>119 (242)</b>
<b>2006</b> New Patients	66 (473)	21 (139)	12 (244)	15 (534)	71 (1160)	35 (491)	<b>220 (439)</b>
Prevalent PD	54 (387)	21 (139)	6 (122)	4 (142)	22 (359)	41 (575)	<b>148 (295)</b>
Prevalent HD	193 (1383)	90 (598)	28 (568)	60 (2135)	277 (4523)	191 (2681)	<b>840 (1675)</b>
Functioning Transplants	28 (201)	21 (139)	8 (162)	30 (1067)	37 (604)	23 (323)	<b>147 (293)</b>
Transplant Ops *	2 (14)	7 (46)	2 (41)	5 (178)	7 (114)	4 (56)	<b>27 (54)</b>
Deaths	47 (337)	13 (86)	8 (162)	4 (142)	46 (751)	23 (323)	<b>141 (281)</b>
<b>2007</b> New Patients	64 (450)	34 (222)	7 (139)	9 (314)	67 (1079)	53 (720)	<b>234 (458)</b>
Prevalent PD	57 (400)	25 (163)	5 (99)	8 (279)	24 (387)	36 (489)	<b>155 (304)</b>
Prevalent HD	219 (1539)	108 (706)	30 (594)	56 (1955)	307 (4945)	210 (2855)	<b>931 (1824)</b>
Functioning Transplants	28 (197)	19 (124)	8 (158)	26 (908)	40 (644)	26 (353)	<b>147 (288)</b>
Transplant Ops *	3 (21)	1 (7)	1 (20)	5 (175)	3 (48)	5 (68)	<b>18 (35)</b>
Deaths	34 (239)	14 (91)	6 (119)	12 (419)	32 (515)	36 (489)	<b>134 (263)</b>
<b>2008</b> New Patients	54 (372)	31 (199)	5 (97)	19 (651)	75 (1192)	58 (774)	<b>242 (466)</b>
Prevalent PD	47 (324)	35 (225)	6 (117)	9 (308)	25 (397)	40 (534)	<b>162 (312)</b>
Prevalent HD	234 (1612)	110 (707)	32 (622)	66 (2261)	329 (5228)	214 (2857)	<b>985 (1896)</b>
Functioning Transplants	31 (214)	19 (122)	8 (155)	28 (959)	36 (572)	37 (494)	<b>159 (306)</b>
Transplant Ops *	5 (34)	4 (26)	1 (19)	5 (171)	1 (16)	15 (200)	<b>31 (60)</b>
Deaths	45 (310)	18 (116)	3 (58)	6 (206)	54 (858)	37 (494)	<b>163 (314)</b>

\* By Referring State, not State of Transplantation

The per million population figures have been calculated from the estimated indigenous populations of each States published in the Australian Bureau of Statistics document 3238.0 Experimental Projections of the Indigenous Population 1991 to 2009 (low series).



# PREVALENT INDIGENOUS DIALYSIS PATIENTS 2008

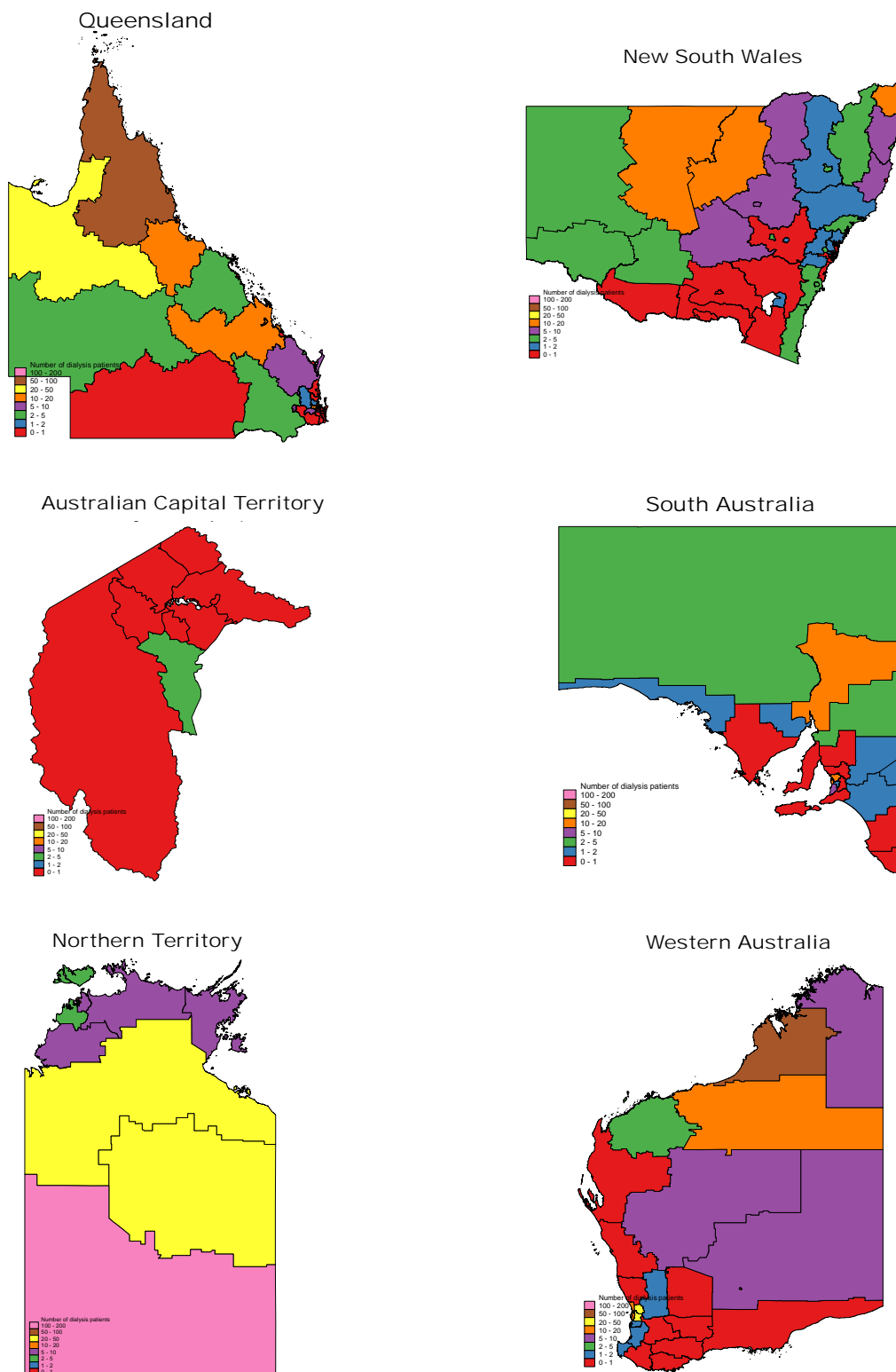
## BY STATISTICAL SUBDIVISION

### DERIVED FROM POSTCODE REPORTED TO ANZDATA

Figure 12.24 shows prevalent rates of indigenous patients in Australia by statistical subdivision. In coming reports, we expect to further develop the geographical presentation of data.

There were two prevalent indigenous patients in Tasmania in 2008.  
More detail can be obtained from Appendix II - Page 31.

Figure 12.24



## CAUSE OF DEATH

### Australia

Cardiac events (38%) were the most common cause of death for Aboriginal and Torres Strait Islander People on dialysis, followed by “social causes” (20%) and infection (19%). In 2008, the most common cause of death in transplanted Aboriginal and Torres Strait Islander People was infection (67%) and cardiac (33%)

### New Zealand

Cardiac events were the most common cause of death in Maori (47%) and Pacific People (50%) treated with dialysis, followed by infection and “social causes”. In transplanted people cardiac events remains the most common cause of death, although the overall number of deaths is small.

Figure 12.25

Cause of Death 2007 - 2008

		Australia			New Zealand		
	Mode of Treatment	Cause of Death	ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
2007	Dialysis	Cardiac	57 (45%)	475 (36%)	62 (48%)	18 (55%)	41 (31%)
		Vascular	15 (12%)	127 (10%)	9 (7%)	1 (3%)	10 (7%)
		Infection	17 (14%)	123 (9%)	22 (17%)	4 (12%)	22 (16%)
		Social	27 (21%)	495 (37%)	24 (19%)	5 (15%)	41 (31%)
		Malignancy	8 (6%)	60 (4%)	6 (4.5%)	3 (9%)	9 (7%)
		Miscellaneous	2 (2%)	53 (4%)	6 (4.5%)	2 (6%)	11 (8%)
		<b>Total</b>		<b>126</b>	<b>1333</b>	<b>129</b>	<b>33</b>
	Transplant	Cardiac	3 (38%)	53 (33%)	2 (40%)	1 (100%)	12 (29%)
		Vascular	1 (12%)	16 (10%)	-	-	2 (5%)
		Infection	3 (38%)	24 (15%)	1 (20%)	-	9 (22%)
		Social	-	8 (5%)	1 (20%)	-	1 (2%)
		Malignancy	1 (12%)	43 (27%)	1 (20%)	-	16 (39%)
		Miscellaneous	-	16 (10%)	-	-	1 (2%)
		<b>Total</b>		<b>8</b>	<b>160</b>	<b>5</b>	<b>1</b>
2008	Dialysis	Cardiac	59 (38%)	442 (33%)	69 (47%)	27 (50%)	50 (32%)
		Vascular	10 (6%)	110 (9%)	12 (8%)	4 (7%)	10 (6%)
		Infection	30 (19%)	136 (10%)	25 (17%)	15 (28%)	24 (16%)
		Social	32 (20%)	513 (39%)	22 (15%)	3 (6%)	46 (30%)
		Malignancy	7 (4%)	85 (6%)	7 (4%)	3 (6%)	15 (10%)
		Miscellaneous	19 (12%)	39 (3%)	13 (9%)	2 (3%)	9 (6%)
		<b>Total</b>		<b>157</b>	<b>1325</b>	<b>148</b>	<b>54</b>
	Transplant	Cardiac	2 (33%)	43 (27%)	1 (50%)	-	7 (29%)
		Vascular	-	11 (7%)	-	-	-
		Infection	4 (67%)	25 (15%)	-	-	5 (21%)
		Social	-	10 (6%)	-	-	-
		Malignancy	-	51 (32%)	-	-	8 (33%)
		Miscellaneous	-	21 (13%)	1 (50%)	-	4 (17%)
		<b>Total</b>		<b>6</b>	<b>161</b>	<b>2</b>	<b>-</b>



## LATE REFERRAL

### Australia

The percentage of Aboriginal and Torres Strait Islander People referred late for treatment decreased to 23.5% in 2008, although the total number has increased from previous years.

Most (61%) commenced haemodialysis using a catheter in 2008.

### New Zealand

The total number of Maori people referred late in 2008 increased from 16.3% in 2007 to 31.8% in 2008, similar to earlier years. Pacific People referred late decreased to 21.4% in 2008, from 30.3% the previous year..

Most Maori (76%) and Pacific People (85%) commenced haemodialysis with a catheter.

Figure 12.26

Late Referral 2004 - 2008 % Late Referral of (Total Number of Patients)					
Australia			New Zealand		
Year	ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
2004	40.0% (195)	26.4% (1754)	26.1% (142)	23.1% (65)	17.4% (253)
2005	33.6% (217)	23.2% (2077)	33.6% (137)	23.0% (74)	13.6% (249)
2006	35.4% (220)	21.6% (2217)	29.1% (168)	16.7% (78)	18.5% (253)
2007	31.6% (234)	22.8% (2132)	16.3% (147)	30.3% (76)	20.2% (243)
2008	23.5% (242)	21.7% (2234)	31.8% (151)	21.4% (84)	17.9% (257)

## VASCULAR ACCESS

Figure 12.27

Vascular Access Use at First ESRF Treatment Haemodialysis 2005 - 2008 (% Using CVC)						
Australia			New Zealand			
Year	Vascular Access	ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
2005	AVF/AVG	58	592	16	14	54
	CVC	129 (68.9%)	952 (61.6%)	81 (83.5%)	40 (74.1%)	94 (63.5%)
2006	AVF/AVG	55	634	24	14	38
	CVC	134 (70.8%)	958 (60.2%)	97 (80.2%)	47 (73.6%)	106 (77.0%)
2007	AVF/AVG	57	631	27	12	38
	CVC	122 (68.2%)	906 (58.9%)	81 (75.0%)	51 (80.9%)	100 (72.4%)
2008	AVF/AVG	77	601	27	9	36
	CVC	119 (60.7%)	947 (61.2%)	87 (76.3%)	53 (85.4%)	104 (74.3%)